

NOTES ON WEATHER IN OTHER PARTS OF THE WORLD.

British Isles.—Over by far the greater part of Great Britain a marked predominance of anticyclonic weather resulted in one of the warmest and driest Mays on record. In Ireland, where the conditions were influenced very frequently by cyclonic systems moving over the Atlantic, the weather was of a more normal character. The effect of warm air blowing over the cool sea surface was seen in a considerable prevalence of coastal fog. An absolute drought was experienced during the latter part of the month at many widely distributed stations. It was most marked in the Thames Valley, where no rain fell after the 11th except at a few stations where the drought was broken by slight precipitation on the 25th. The general rainfall expressed as a percentage of the average was: England and Wales, 41; Scotland, 41; Ireland, 120; British Isles, 62.

*France.*¹—"Generally good weather; greatly improved crop prospects."

*Spain.*¹—"Weather has not been altogether favorable for crops, the excessive rains causing some floods."

*Italy.*¹—"A return of fine and warmer weather has favored crops."

*Germany.*¹—"Weather has been fairly seasonable."

Argentina.—Weather continues fine and further progress has been made in the picking of the corn crop. Ploughing for the new crop of wheat has also been active under the favorable weather conditions, recent precipitation having put the soil in good condition.—*New York Ev. Post, May 23, 1919.*

¹ From Broomhall cabled report, *New York Ev. Post*, May 28, 1919.

DETAILS OF WEATHER OF THE MONTH IN THE UNITED STATES.

CYCLONES AND ANTICYCLONES.

By E. H. BOWIE, Supervising Forecaster.

During the month of May the forecaster dealt with eleven primary low-pressure areas, and of these four belonged to the Alberta type, four to the South Pacific type, and three unclassified, made their first appearance over southern Canada, east of the 90th meridian. Moreover there were five secondary low-pressure developments which became well-defined low-pressure areas. One of these formed over southern Arizona, one over Kansas, one over Wisconsin, one over North Carolina, and one off the New Jersey coast. The low-pressure areas followed no well-defined course, and their directions and speed of movements were markedly variable, except during the first decade of the month when their directions were toward the east-northeast and their speed of movement rapid. At other times their rates of progress were slow and their directions of progress erratic, from which it is inferred that the general eastward drift of the atmosphere was not at all uniform as to speed and direction.

There were eleven high-pressure areas charted during May, and of these one made its first appearance off the California coast, one off the north Pacific coast, four entered the United States from Canada west of the 100th meridian, and five appeared over southern Canada east of the 95th meridian. The two high-pressure areas that made their appearance off the Pacific coast preserved their identity, crossed the United States, and reached or passed off the south Atlantic coast, and the others passed eastward, north of latitude 40 and disappeared over the Atlantic Ocean.

THE WEATHER ELEMENTS.

By P. C. Day, Climatologist and Chief of Division.

[Dated: Weather Bureau, Washington, July 1, 1919.]

PRESSURE AND WINDS.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds for May, 1919, are graphically shown on Chart VII, while the means at the several stations, with the departures from the normal, are shown on Tables I and III.

The general atmospheric circulation was not marked by extremes of either high or low pressure, although

areas of moderately low pressure without well-defined movements formed at frequent intervals over the central and eastern districts. These favored much cloudiness and frequent local showers, heavy occasionally, but usually not sufficient to bring the total fall for the month greatly above the normal.

The average pressure for the month was below normal over all portions of the United States, save from the Central Plains northeastward to the Great Lakes, and locally in northern New England and the far Northwest, where the monthly averages were slightly higher than normal. In Canada the monthly pressure was below normal in the northwestern districts but slightly above to the northward of the Great Lakes and thence eastward to the Maritime Provinces.

The greatest negative departures were mainly in the southeastern districts, where locally the pressure readings were below 30 inches during nearly the entire second and third decades of the month. In Canada the negative departures were rather large in the western districts, increasing toward the north.

The general pressure distribution favored southerly winds in the Plains region and over much of the Atlantic and Gulf Coast States. In the Lake region and generally over the Ohio and Mississippi Valleys the winds were mostly from northerly points, while to the westward of the Rocky Mountains they assumed their usual variable courses, due frequently to the influence of local topography, although along the immediate Pacific coast they mainly had strong westerly components.

TEMPERATURE.

The month opened with cool weather in the Great Plains and Rocky Mountain regions and generally moderate spring weather in other districts. Only slight temperature changes occurred until about the middle of the first decade, when there were sharp falls in the northern districts between the Rocky Mountains and the Great Lakes, due to high pressure moving eastward over Canada. This cool area advanced rapidly toward the Atlantic coast and frosts occurred generally over the more northern districts. Cool weather continued very generally over the central and northern districts east of the Rocky Mountains throughout the remainder of the first decade, and over most eastern districts, during the early part of the second decade. In portions of the Plateau region, however, the temperature had remained above normal continuously since the first of the month.

By the middle of the second decade the temperatures had risen to about normal in all parts of the country where cool weather had prevailed and only slight changes occurred thereafter during the remainder of the decade. During the early part of the last decade temperatures were without marked variations and were generally above or only slightly less than normal, but about the 25th there was a considerable warming up in the Northwest and warmer weather gradually overspread all central and northern districts, continuing until the end of the month from the Mississippi Valley eastward.

In the far West high pressure overspread the northern and central districts toward the latter part of the month and at the end decidedly cold weather prevailed over these districts, the temperature falling below the normal for the first time during the month at points in the Central Plateau. Temperatures nearly 10° below freezing were reported from exposed points and snows occurred locally in the mountain districts.

For the month as a whole the temperature was below the normal in the Ohio and Mississippi Valleys, the Gulf States, and the middle and southern Great Plains. On the other hand, May was warmer than normal in the Atlantic coast and Appalachian Mountain districts, along the northern border from the Upper Lakes westward, and from the Rocky Mountains to the Pacific coast, except for a small area in the far Northwest, where there was a slight deficiency.

In portions of the Middle Plateau the maximum temperatures during May were the highest of record for that month, and the daily means were above normal continuously except for the last two days. Over large areas in central and northern districts between the Appalachian and Rocky Mountains May was the first month since October, 1918, inclusive, with monthly mean temperatures below the normal.

PRECIPITATION.

The month opened with an area of rain covering all districts east of the Mississippi, except the extreme northeast and southeast sections. With the eastward movement of the storm center during the 2d the rain area extended into these sections also. During the 2d and 3d an area of rain overspread the central and northern Plains, extending during the following day or two into the Lake region and Ohio Valley and thence to New England, the falls being heavy in the middle Mississippi Valley and Great Lakes region. An offshoot of the storm extended into the Gulf States, causing some heavy rains in Texas and the lower Mississippi Valley. Local showers occurred in many districts east of the Rocky Mountains about the 6th, and during the following three or four days well-distributed and generous rains occurred in nearly all portions of the country from the Rocky Mountains eastward.

During the middle portion of the month precipitation was mostly in the form of local showers, occasionally heavy, but confined principally to the central and eastern districts. Near the end of the second decade a considerable area of rain overspread the Plains region with its center located near the middle Mississippi Valley, and from thence, during the following few days general rains extended into nearly all eastern districts. At the same time a rain area developed in the far Southwest and by

the morning of the 24th heavy rains had fallen over much of western Texas, New Mexico, Arizona, and portions of adjoining States. This rain area extended into the Gulf States by the 25th, and frequent showers prevailed over these regions during the remainder of the month, some heavy falls being reported from southern Florida on the 31st.

Over the central and northern portions of the country the latter part of the month was comparatively free from rains until about the end when showers again set in over the central and northern Plains and in the upper Mississippi Valley.

The monthly precipitation was above normal at practically all points from Texas eastward and northeastward to the Atlantic coast, the excesses being quite large in the west Gulf States and over the southern drainage of the Ohio. Precipitation was likewise above normal, but to a lesser extent, over portions of the far Southwest and at points in the Dakotas. From the middle Plains States west and northwest to the Pacific coast the monthly precipitation was less than normal and in portions of the far West and Northwest the month was unusually dry, in northern California particularly it was the driest May in nearly half a century. This deficiency was greatly accentuated by the general lack of precipitation during the preceding month.

The month as a whole was one of much cloudiness and frequent, though generally not heavy showers, in the districts from the Mississippi River eastward. This was particularly true in the middle Gulf States and the southern portions of the Ohio Valley.

RELATIVE HUMIDITY.

The departures of the monthly averages of relative humidity closely followed those of the precipitation, the areas showing an excess of precipitation having likewise an excess of humidity, and negative departures of precipitation were associated with similar departures of humidity. Despite the generally moist condition of the atmosphere over eastern districts, some unusually low humidity values were observed. This was particularly marked over New England at noon of the 13th when the humidity was as low as 14 per cent at Portland, Me., and 23 per cent at Boston. Westerly winds prevailed at the time but a storm had only recently passed over that region and the barometer was still below 30 inches, and with no high pressure to the westward. On the same date unusually low humidity was recorded in the extreme western part of the country. At Mount Tamalpais, Calif., nearly 2,500 feet above sea level, the humidity at the morning observation, 5 a. m., local standard time, was only 6 per cent. This with strong southwest winds, a complete covering of upper clouds and dense fog below the summit.

LOCAL STORMS.

Nearly all sections of the country were free from high winds of any character and less than the usual amount of damage or loss was sustained from this cause. Indications of a tornado were observed in the vicinity of Mobile, Ala., on the 26th, several persons being injured, but no material loss was sustained. High winds at Atlanta, Ga., on the 7th, caused considerable damage, but no lives were lost.

Average accumulated departures for May, 1919.

Winds of 50 mi./hr. (23.4 m./sec.) or over during May, 1919.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
	° F.	° F.	° F.	In.	In.	In.	P. ct.		P. ct.	
New England.....	55.6	+1.1	+13.6	4.55	+1.20	+2.70	6.0	+0.4	74	- 2
Middle Atlantic.....	62.4	+0.8	+13.2	4.50	+1.00	+0.10	5.2	+0.1	74	+ 3
South Atlantic.....	70.7	+0.9	+ 5.7	4.19	+0.40	-3.00	5.8	+1.2	80	+ 7
Florida Peninsula..	77.5	-0.5	- 1.7	8.17	+3.90	+6.90	5.5	+1.2	77	+ 3
East Gulf.....	70.4	-1.3	- 1.7	5.89	+2.40	+5.60	6.2	+1.4	78	+ 6
West Gulf.....	70.4	-2.5	- 3.0	5.31	+1.20	-0.20	5.9	+1.0	79	+ 4
Ohio Valley and Tennessee.....	62.6	-2.4	+ 5.1	4.87	+1.20	-1.30	6.7	+1.6	73	+ 5
Lower Lakes.....	55.9	-1.6	+11.2	4.22	+1.10	+0.40	5.9	+0.5	72	+ 2
Upper Lakes.....	52.8	+0.2	+17.7	3.15	-0.30	-0.70	4.7	-0.4	71	- 1
North Dakota.....	56.3	+2.0	+18.0	3.42	+1.00	+0.60	4.0	-1.4	64	- 1
Upper Mississippi Valley.....	59.3	-2.7	+12.9	3.77	-0.40	-0.80	6.1	+0.8	71	+ 3
Missouri Valley.....	60.3	-1.7	+15.0	3.28	-1.00	-1.00	5.4	0.0	69	+ 4
Northern slope.....	54.4	+1.4	+13.1	1.35	-1.00	-2.10	4.6	-0.9	56	- 5
Middle slope.....	61.4	-1.4	+ 4.6	3.04	-0.80	-1.80	5.8	+0.9	69	+ 7
Southern slope.....	68.2	-2.5	- 6.3	3.21	+0.50	+3.30	4.7	+0.4	69	+15
Southern Plateau..	67.2	+1.3	- 6.0	0.78	+0.50	+0.40	2.6	0.0	40	+ 9
Middle Plateau.....	61.2	+4.7	+ 5.5	0.99	-0.20	-1.80	3.5	-0.6	39	- 7
Northern Plateau..	57.1	+0.2	+ 9.4	0.49	-1.20	-1.40	5.2	+0.1	48	- 8
North Pacific.....	53.7	-0.2	+ 4.9	2.44	-0.30	+2.00	5.6	-0.8	72	- 5
Middle Pacific.....	58.8	+1.2	+ 0.3	0.28	-1.00	-1.60	3.0	-0.9	64	- 4
South Pacific.....	62.7	+0.6	+ 3.0	0.20	-0.40	-3.70	4.8	+0.8	72	+ 3

Station.	Date.	Velocity.	Direction.	Station.	Date.	Velocity.	Direction.
Atlanta, Ga.....	7	60	w.	North Head, Wash	11	57	s.
Block Island, R. I.	10	53	e.	Do.....	14	50	s.
Buffalo, N. Y.....	2	60	sw.	Do.....	25	57	s.
Del Rio, Tex.....	23	50	e.	Do.....	26	64	se.
Jacksonville, Fla...	20	54	sw.	Pensacola, Fla.....	28	62	sw.
Do.....	27	53	s.	Point Reyes Light, Calif.....	8	60	nw.
Mount Tamalpais, Calif.....	7	66	nw.	Do.....	9	62	nw.
Do.....	8	84	nw.	Do.....	10	61	nw.
Do.....	9	67	nw.	Do.....	11	61	nw.
Do.....	10	53	nw.	Do.....	12	62	nw.
Do.....	11	84	nw.	Do.....	26	56	nw.
Do.....	12	52	nw.	Do.....	28	72	nw.
Do.....	15	56	nw.	Do.....	29	83	nw.
Do.....	25	56	nw.	Do.....	30	57	nw.
Do.....	26	55	nw.	Sandy Hook, N. J.	10	56	ne.
Do.....	28	50	nw.	Tatoosh Island, Wash.....	26	62	s.
New York, N. Y....	5	55	nw.				